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ABSTRACT

2 A coronary bypass system incorporating a minimized extracorporeal blood circulation
3 module is disclosed. In one embodiment, the extracorporeal blood circulation module comprises
4 a rigid support plane for carrying the blood-handling components of the system, including an
5 blood pump, an oxygenator, a filter, a venous blood reservoir, and a sampling manifold. The
6 extracorporeal blood circulation module is pre-configured to interconnect all of the blood-
7 handling modules, such that total interconnective tubing length is minimized and interfacing with
8 an overall heart-lung bypass console can be accomplished with maximum efficiency. In one
9 embodiment, the venous blood reservoir is of the soft-shell variety mounted over a raised
10 platform defined in the front surface of the support plane. The raised platform further defines a
11 indentation on the front surface of the support plane. A rigid plate of the venous blood reservoir
12 cooperates with the front surface of the support plane over the indentation to define a vacuum
13 chamber surrounding a flexible membrane of the reservoir. A vacuum port extending into the
14 vacuum chamber defined by the support plane and the reservoir plate is adapted to be coupled
15 to a vacuum source, such that a regulated negative pressure can be applied to the flexible
16 reservoir membrane, thereby allowing for vacuum-assisted venous drainage.